Crysler, Ruby

From: Mowan, Ryan <ryan.mowan@aecom.com>
Sent: Monday, July 10, 2017 11:22 AM
To: Wight, Brian; Crysler, Ruby; Jacqueline.Grunau@ks.gov; Mark D. Wichman (mark.d.wichman@usace.army.mil); Sansom, Andrea NWO; KNIGHT, COLE D GS-11 USAF AMC 22 CES/CEAN (cole.knight@us.af.mil); michaeld@ageiss-inc.com; 'Jose.hurtado@us.af.mil'; GUTIERREZ, NEYDA V CTR USAF AFMC AFCEC/CZR; Gangelhoff, Dustin
Subject: RE: McConnell AFB PBR: Project Status Meeting
Attachments: 11JUL17_AGE.pdf

Categories: Record Saved - Shared

On behalf of the Air Force, the agenda and attachments for tomorrow's meeting are attached. Hard copies will be provided for those in attendance at EPA.

Ryan

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-----Original Appointment-----
From: Wight, Brian
Sent: Thursday, July 06, 2017 7:28 AM
To: Wight, Brian; Crysler, Ruby; Jacqueline.Grunau@ks.gov; Mark D. Wichman (mark.d.wichman@usace.army.mil); Sansom, Andrea NWO; KNIGHT, COLE D GS-11 USAF AMC 22 CES/CEAN (cole.knight@us.af.mil); michaeld@ageiss-inc.com; 'Jose.hurtado@us.af.mil'; GUTIERREZ, NEYDA V CTR USAF AFMC AFCEC/CZR; Mowan, Ryan; Gangelhoff, Dustin
Cc: Jacqueline Grunau [KDHE]
Subject: McConnell AFB PBR: Project Status Meeting
When: Tuesday, July 11, 2017 10:00 AM-12:00 PM (UTC-06:00) Central Time (US & Canada).
Where: EPA

All,

This invitation is for the McConnell AFB PBR project status meeting. An agenda is being prepared and will be transmitted prior to the meeting. Call in and WebEx information is below for anyone who is not attending in person. Please confirm your availability to participate in this meeting by responding to this invitation.

Thanks

Brian

-- Do not delete or change any of the following text. --

Join me now in my Personal Room.

Join WebEx meeting
https://aecom.webex.com/join/brian.wightaecom.com | 594 097 967

Join from a video conferencing system or application
Dial brian.wightaecom.com@aecom.webex.com
If you are the host, you can also enter your host PIN in your video conferencing system or application to start the meeting.

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Can't join the meeting? Contact support.

Project Status Regulator Call Agenda
McConnell Air Force Base Multi Site Performance Based Remediation (PBR)

Date/Time: 11 July 2017 – 1000 - 1200 hrs.

Location: EPA Region VII

Discussion Items

- FT006 Excavation Update
- SWMU 107/Hardfill No. 4
- 1,4-Dioxane Sampling Work Plan
- Field Work Schedule
- Remedy Proposal Tech Memo Tracking/Comments
- RW629 (SWMU 177) Benzo(a)pyrene Exceedance
- OW579 (SWMU 188) Sample Locations
- Action Items
- Other

Action Items

- SS035 CMCR (EPA)
- OW040 path forward (AFCEC/USACE)
- SS004: SWMU 201 RFA Addendum Report (URS)
- SS031: Spill Site 31 (SWMU 174) Site Characterization Report (URS)
- SS003: Install and sample a new monitoring well in the area that could not be injected (URS)
- ZZ052: Determine if new hangar covers the site or not. Resample groundwater and also soil if the site is accessible (URS)
- DP013: Prepare excavation work plan (URS)
- SS548: Prepare Additional Investigation Work Plan Addendum for additional direct push sampling (URS)
- OW971: Submit site closure report recommending NFA (URS)
- TU601: include monitoring well installation, development, and sampling in final version of RFI Report (URS)
- Vapor Intrusion Study WP: Wait for preliminary approval of WP concept from EPA before issuing the pre-draft WP
- SS032: Prepare email describing the direct push sampling plan to prove that metals in groundwater are due to turbidity (URS)
- OW625: respond to EPAs email with updated text, and clarify in the document. (URS)
- Remedy proposal TM tracking sheet: Update the table to include the hardfill/landfill sites and re-transmit to stakeholders. (URS)

Attachments

- FT006 Excavation Data
- SWMU 107/Hardfill No. 4 Historical Information
- Upcoming Field Work List
- Remedy Proposal Tracking Table
- RW629 Data
- OW579 Utility and Sampling Location Figures

Maximum	KDHE RSK		USEPA RSL		FT06-EX01				FT06-EX02				FT06-EX03				FT06-EX04				FT06-EX
					00600-EX01-0517				00600-EX02-0517				00600-EX03-0517				00600-EX04-0517				00600-EX0
					May 23, 2017				May 23, 2017				May 23, 2017				May 23, 2017				May 23, 2
					12 feet bgs				6-8 feet bgs				6-8 feet bgs				6-8 feet bgs				6-8 feet
	Residential Soil	Residential Soil to Groundwater Pathway	Residential Soil	Protection of Groundwater Risk-Based SSL[1]	Result	DL/LOD[1]	LOQ	Qual	Result	DL/LOD[1]	LOQ	Qual	Result	DL/LOD[1]	LOQ	Qual	Result	DL/LOD[1]	LOQ	Qual	Result	DL/LOD[1]
1.7 J	313,000	85.9	230,000	100	<	2	5	U	<	2	5	U	<	2	5	U	<	2	5	UJ	1.7	0.79
110	23,000	855	160,000	11	14	2	5		<	2	5	U	3	1.35	5	J	<	2	5	UJ	49	2
6.6	202,000	1,220	1,600,000	110	<	2	5	U	<	2	5	U	<	2	5	U	<	2	5	UJ	<	2
2.9 J	15,900	168	1,200	0.23	2.1	0.63	5	J	<	2	5	U	<	2	5	U	<	2	5	UJ	1.5	0.63
16 J	109,000	121	24,000	5.1	<	2	5	U	<	2	5	U	<	2	5	U	5.9	2	5	J	16	2
150,000	4,320,000	51,200	4,900,000	760	28	2	5		2,000	15	50		<	2	5	U	3.9	1.3	5	J	1.3	1.3
120 J	5,850	84.2	940	0.18	<	2	5	U	<	2	5	U	<	2	5	U	30	2	5	J	120	2
42	4,470	20.5	60	0.0065	42	2	5		21	2	5		<	2	5	U	<	2	5	UJ	3.6	1.68

).

)HE Tier 2 Risk-Based Summary Table of the KDHE Risk

L Summary Table (TR=1E-6, HQ=1.0) (June 2017).
to groundwater RSK for toluene.

ent

FIELD ID SAMPLE ID DATE COLLECTED SAMPLE DEPTH	Frequency	Maximum	KDHE RSK		USEPA RSL		FT06-EX07 00600-EX07-0517 May 23, 2017 6-8 feet bgs				FT06-EX08 00600-EX08-0517 May 23, 2017 12 feet bgs			
			Residential Soil	Residential Soil to Groundwater Pathway	Residential Soil	Protection of Groundwater Risk-Based SSL[1]	Result	DL/LOD[1]	LOQ	Qual	Result	DL/LOD[1]	LOQ	Qual
Volatile Organic Compounds (µg/kg)														
1,1-Dichloroethene	1 / 8	1.7 J	313,000	85.9	230,000	100	<	2	5	UJ	<	2	5	U
1,2-Dichloroethene (cis)	5 / 8	110	23,000	855	160,000	11	<	2	5	UJ	100	2	5	
1,2-Dichloroethene (trans)	2 / 8	6.6	202,000	1,220	1,600,000	110	<	2	5	UJ	6.6	2	5	
Benzene	4 / 8	2.9 J	15,900	168	1,200	0.23	<	2	5	UJ	0.69	0.63	5	J
Tetrachloroethene	2 / 8	16 J	109,000	121	24,000	5.1	<	2	5	UJ	<	2	5	U
Toluene	7 / 8	150,000	4,320,000	51,200	4,900,000	760	7	2	5	J	4.8	1.3	5	J
Trichloroethene	4 / 8	120 J	5,850	84.2	940	0.18	<	2	5	UJ	2.3	0.98	5	J
Vinyl Chloride	5 / 8	42	4,470	20.5	60	0.0065	2.3	1.68	5	J	30	2	5	

Notes:

[1] DL value shown if result is a detection less than LOQ.

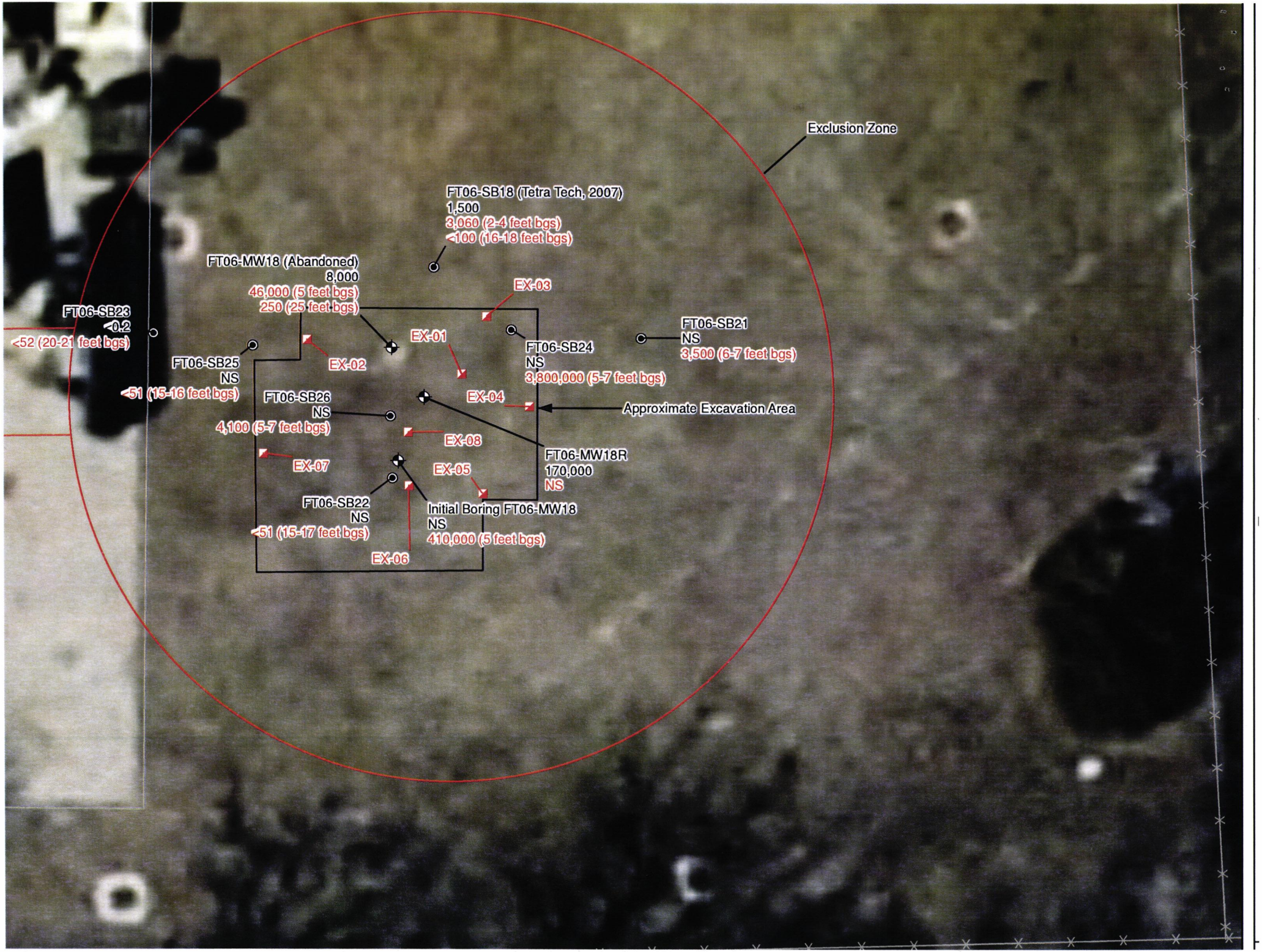
KDHE RSK screening levels are from Appendix A, KDHE Tier 2 Risk-Based Summary Table of the KDHE Risk Manual (September 2015).

USEPA screening levels are from the most current RSL Summary Table (TR=1E-6, HQ=1.0) (June 2017).

indicates exceedance of KDHE residential soil to groundwater RSK for toluene.

Acronyms and Abbreviations:

< = less than LOQ
µg/kg = micrograms per kilogram
AFB = Air Force Base
bgs = below ground surface
DL = detection limit
HQ = hazard quotient
ID = identification
J = estimated
KDHE = Kansas Department of Health and Environment
LOD = limit of detection
LOQ = limit of quantitation
Qual = qualifier


Exclusion Zone
FT06-SB18 (Tetra Tech, 2007)
1,500
3,060 (2-4 feet bgs)
<100 (16-18 feet bgs)
FT06-MW18 (Abandoned)
8,000
46,000 (5 feet bgs)
250 (25 feet bgs)
EX-03
FT06-SB23
<0.2
<52 (20-21 feet bgs)
EX-01
FT06-SB21
NS
3,500 (6-7 feet bgs)
FT06-SB24
NS
3,800,000 (5-7 feet bgs)
FT06-SB25
NS
<51 (15-16 feet bgs)
EX-02
FT06-SB26
NS
4,100 (5-7 feet bgs)
EX-04
Approximate Excavation Area
EX-08
FT06-MW18R
170,000
NS
EX-07
EX-05
FT06-SB22
NS
<51 (15-17 feet bgs)
Initial Boring FT06-MW18
NS
410,000 (5 feet bgs)
EX-06

INSTALLATION RESTORATION PROGRAM
PHASE I - RECORDS SEARCH
McCONNELL AFB,
KANSAS

Prepared For

UNITED STATES AIR FORCE
STRATEGIC AIR COMMAND
Deputy Chief of Staff
Engineering and Services
Offutt AFB, Nebraska 68113

AUGUST 1985

Prepared By

ENGINEERING-SCIENCE
57 Executive Park South, Suite 590
Atlanta, Georgia 30329

natural grade. Wastes from shop dumpsters, household waste and general refuse were taken to this site and frequently burned. The site is closed with a soil cover and grass is growing on the site.

Hardfill Disposal Areas

There are several areas at McConnell AFB that have been used for disposal of construction rubble, brush and other hardfill. Hardfill areas that were identified by base personnel are presented in Figure 4.4. Based on interviews conducted with base personnel, review of file information and visual observations made during the site visit, there is no evidence of any hazardous waste disposal associated with these hardfill areas.

Hardfill No. 1 operated from about 1955 to 1965. This site is located on the southeastern end of the abandoned runway in an area now designated for mobility training. Hardfill No. 2 is located by Landfill No. 2 and has been in use from 1965 to present. Hardfill No. 3 is located on the eastern edge of the munitions storage area and was in use from about 1958 to 1962. Hardfill No. 4 is located east of the DPDO building, and was used from 1955 to 1965 for the disposal of scrapped aircraft wreckage.

Low-Level Radioactive Materials Disposal Site

A low level radioactive material disposal site is located west of Mulvane Road on the edge of the base golf course (Figure 4.5). The site was used from 1965 to 1968 for disposal of low-level radioactive electronic tubes and possibly other radioactive material. Accumulated wastes were encased in concrete and buried to a depth of 10-12 feet. Interviews with base personnel confirm the disposal of the material and an estimated volume of 12 drums of concrete encased material is buried on the 1/4 acre site. The site was visited in 1982 by personnel from the BES office and 384 AREFW Safety Division, and no elevated radioactivity levels were detected at the surface. As reported by interviewees, the area previously had a fence and warning signs around it. There is no evidence of the fence or burial site at the present-day site.

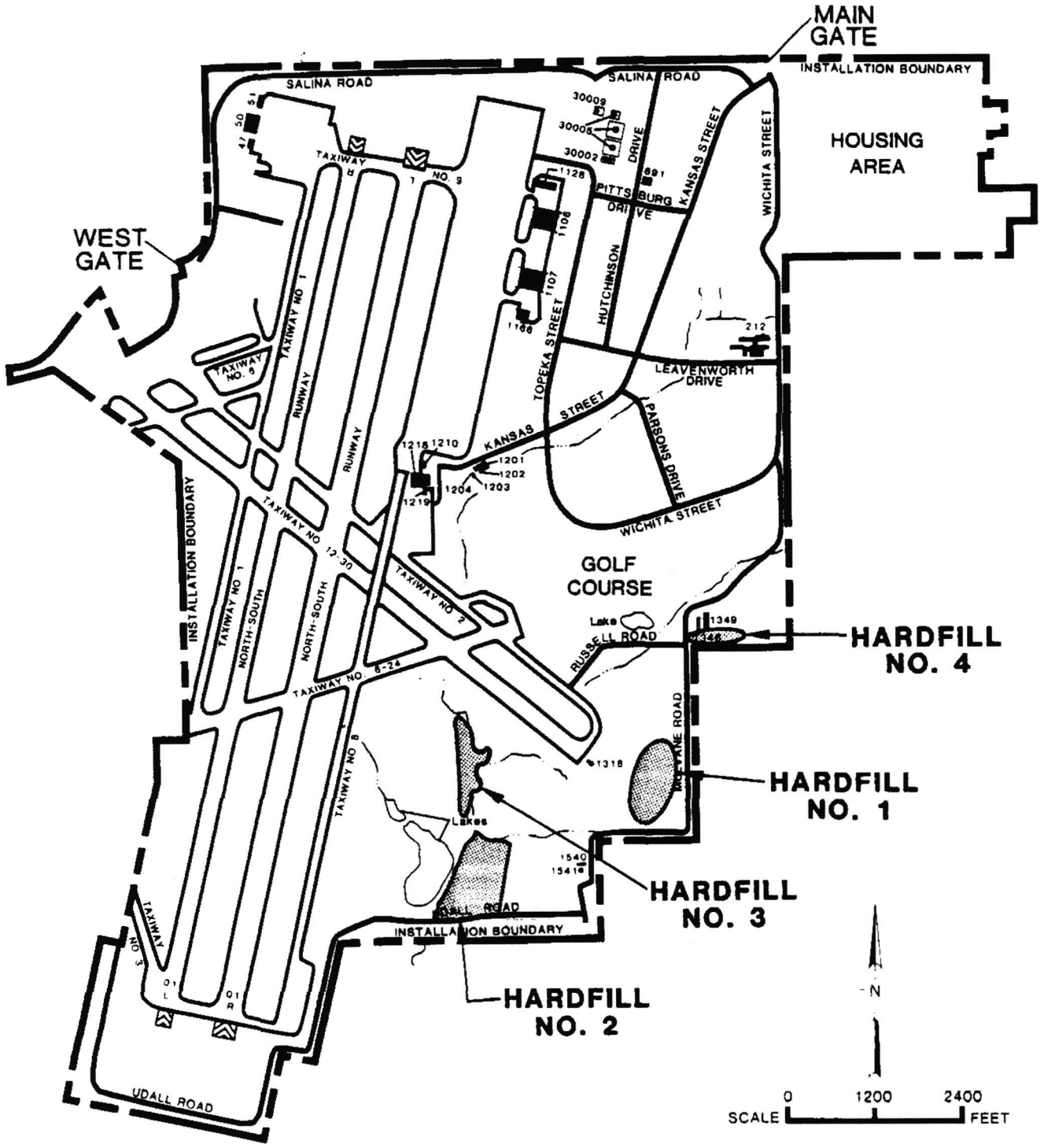
Sanitary Sewage System

Sanitary wastewater from the McConnell AFB is connected to the city of Wichita sewage treatment plant. The sanitary sewage collection

02 93

McCONNELL AFB

HARDFILL DISPOSAL SITES



SOURCE: INSTALLATION DOCUMENTS

Prior to the activation of the present area, explosive ordnance disposal took place in an area approximately one mile east of the current area. This area was used since the 1950's, and was operated similar to the present day site.

Sanitary wastewater at Smoky Hill Weapons Range is handled by septic tanks and lagoons. The operations center and the headquarters complex are served by two individual systems. During the site visit, the interviewees did not report any operational problems and the potential for environmental contamination is minimal.

EVALUATION OF PAST DISPOSAL ACTIVITIES AND FACILITIES

Review of past waste generation and management practices at McConnell AFB has resulted in identification of 24 sites and/or activities which were considered as areas of concern for potential contamination and migration of contaminants.

Sites Eliminated from Further Evaluation

The sites of initial concern were evaluated using the Flow Chart presented in Figure 1.2. Sites not considered to have a potential for contamination were deleted from further evaluation. The sites which have potential for contamination and migration of contaminants were evaluated using the Hazard Assessment Rating Methodology (HARM). Table 4.4 summarizes the results of the flow chart logic for each of the areas of initial concern.

Eleven (11) of the 24 sites assessed did not warrant further evaluation. The rationale for omitting these sites from HARM evaluation is discussed below. These eleven sites include:

- Four hardfill areas
- Former missile site 3-7
- EOD Area McConnell
- EOD Area Smoky Hill Weapons Range
- Energy Recovery Boiler
- PCB Spill
- Fire Protection Training Area No. 4
- Operations Center Landfill - Smoky Hill Weapons Range
- Sanitary Sewer System

TABLE 4.4
SUMMARY OF FLOW CHART LOGIC FOR AREAS OF INITIAL HEALTH, WELFARE AND ENVIRONMENTAL CONCERN AT MCCONNELL AFB

Site	Potential Hazard to Health, Welfare or Environment	Need for Further IRP Evaluation Action	HARM Rating
Stormwater Drainage System	N	N	N
Sanitary Sewer System	N	N	N
Landfill No. 1	Y	Y	Y
Landfill No. 2	Y	Y	Y
Fire Protection Training Area No. 1	Y	Y	Y
Fire Protection Training Area No. 2	Y	Y	Y
Fire Protection Training Area No. 3	Y	Y	Y
Fire Protection Training Area No. 5	Y	Y	Y
Spill Site No. 1	Y	Y	Y
Spill Site No. 2	Y	Y	Y
Spill Site No. 3	Y	Y	Y
Spill Site No. 4	Y	Y	Y
Low-Level Radioactive Waste Disposal Site	Y	Y	Y
Missile Site 3-2	Y	Y	Y
Smoky Hill Weapons Range Headquarters Disposal Site	Y	Y	Y
SHWR - Operation Center Disposal Site	Y	N	N
Missile Site 3-7	Y	N	N
Oil Water Separators	N	N	N
Fire Protection Training Area No. 4	Y	N	N
PCB Spill	Y	N	N
McConnell EOD	Y	N	N
SHWR EOD	Y	N	N
Energy Recovery Boiler	Y	N	N
4 Hard Fill Areas	N	N	N

- o Oil Water Separator
- o Stormwater Drainage System

The four hardfill areas located on the base were used for disposal of construction rubble. No evidence of hazardous waste disposal was reported associated with any of the four sites.

Former missile site 3-7, the site of the 1978 oxidizer leak, has been completely inactivated. Cleanup activities have been completed and no evidence of environmental contamination resulting from the accident has been found. Base environmental data indicates that there is currently no potential hazard to health, welfare or environment. This site is not recommended for the IRP action.

The remaining missile sites, excluding site 3-2, present no current environmental threat. The deactivation program being carried out will remove the potential for these sites to become contaminant sources in the future. There have been incidents where minor discharges of fuel, oil, and cleaning fluids have occurred, but these quantities were very low and no significant contamiantion would be expected. Natural cleaning phenomena such as biodegradation would act on these low levels and prevent any accummulation of wastes.

The explosives ordnance area at McConnell AFB and the explosives ordnance disposal munitions landfills at Smoky Hill Weapons Range are not suspected of containing any hazardous materials wastes. Materials sent to these areas were in an inert form and pose no environmental threat.

The Energy Recovery Boiler has been tested on several occasions, and no ash or residue is generated by the unit. No adverse environmental impact should result from the continued operation of this unit.

The PCB spill which occurred in 1984 was contained on a concrete floor in Building 1. The spill was cleaned up, and the residue and contaminated materials have been drummed and sent to the PCB storage area. No environmental impact is expected to result from this spill.

Fire Protection Training Area No. 4 was operated as a temporary site only. The amount of flammable material utilized at this site combined with the short duration training that occurred result in minimal environmental impact from this site, and it was not recommended for

further IRP action. In addition, due to the proximity of this site to FPTA No. 5, residual contamination that may exist would be addressed under IRP actions recommended for FPTA No. 5.

The landfill located at the operations center of the Smoky Hill Weapons Range primarily received paper, wood, general office trash, and scrapmetal. This material is non-hazardous in nature, and no significant environmental impact should result from this landfill operation. Thus, this site was not recommended for further IRP action.

The sanitary sewer system, the stormwater drainage system and the oil water separators do not receive significant quantities of hazardous wastes and do not present a potential for environmental contamination.

Sites Evaluated Using HARM

The remaining 12 sites identified in Table 4.3 were evaluated using the Hazard Assessment Rating Methodology. The HARM process takes into account characteristics of potential receptors, waste characteristics, pathways for migration, and specific characteristics of the site related to waste management practices. Results of the HARM analysis for the sites are summarized in Table 4.5.

The procedures used in the HARM system are outlined in Appendix G and the specific rating forms for the 12 sites at McConnell AFB are presented in Appendix H. The HARM system is designed to indicate the relative need for follow on action. Photographs of these sites are included in Appendix F.

C2-087-03810

FINAL

SOLID WASTE MANAGEMENT UNIT

ASSESSMENT REPORT

McConnell Air Force Base, Kansas

Air Force Project No. PRQE936079

March 1999

FINAL
Solid Waste Management Unit Assessment Report McConnell Air Force Base, Kansas

Prepared by

Parsons Engineering Science, Inc.
8000 Centre Park Drive, Suite 200
Austin, Texas 78754

Prepared for

McConnell Air Force Base
22 CES/CEVR
McConnell AFB, Kansas 67221

United State Air Force
Air Force Center for Environmental Excellence
(AFCEE)
Environmental Restoration Division (ERD)
Brooks Air Force Base, Texas 78235-5000

March, 1999

USAF Contract F41624-92-D-8036,
Delivery Order 001302
Air Force Project No. PRQE936079

Exposure Potential: The unit is within the fenced boundaries of McConnell AFB and is covered with vegetation, therefore, the exposure potential through any medium is minimal.

Additional Information Requirements: Sampling data is needed to determine if EOD wastes have been disposed of in this unit and determine the presence or absence of soil and groundwater contamination

Recommendations: Small-scale soil and groundwater sampling to determine if EOD waste residues remain at the site and/or impacted the groundwater. In addition, sample the adjacent runoff creek for sediment and surface water for EOD waste residues.

MAFB 107: HARDFILL AREA 4

Hardfill area 4 is an approximately 2 acre area south and southeast of the Defense Reutilization and Marketing Office (DRMO) storage facilities. This area was used from 1955 through 1965 for disposal of scrapped aircraft wreckage. The area was covered by regularly mowed grass by October 1983.

The site is located adjacent to IRP site FT06 (Fire Training Area); SWMUs MAFB 160 (DRMO storage yard) and MAFB 117 (Bldg. 1358 septic system) are also located in this area. Two FT06 monitoring wells (MW2 and MW5) are located within the boundary of MAFB 107. The solvent trichloroethene (TCE) has been detected in groundwater in these wells (Parsons ES, 1997). Additional Geoprobe work under IRP at FT06 completed 12-23-98 delineated the extent of TCE in the groundwater. The highest reading for TCE was 732 ppb located south of the base Dog Kennel. The plume appears to be migrating off base with the highest reading for TCE at 205 ppb.

Unit Characteristics: This unit is comprised of approximately 2 acres of relatively flat terrain. The depth to which debris was buried is unknown. The area was observed to be covered with regularly mowed grass during the December 1994 VSI.

Waste Characteristics: Scrapped aircraft wreckage was disposed of in this unit.

Pollutant Migration Pathways: The materials placed in this unit are essentially inert materials and not likely to release any contaminant constituents therefore the potential for groundwater, surface water, air, soils, or subsurface gas to be pollutant migration pathways is negligible.

Evidence of Release: The disposal of scrapped aircraft wreckage in this unit constitutes a release of waste to the environment (soil). There is no evidence of off-base release of contaminants to the environment from this unit other than a TCE groundwater plume with possible association with MAFB 160.

Release Potential: It is unknown whether wastes were stored or released form this unit, therefore the release potential cannot be determined.

Exposure Potential: In addition to the fact that the wastes disposed of in this unit are essentially inert, the unit is within the fenced boundaries of McConnell AFB and is covered with vegetation; therefore, the exposure potential through dermal contact is minimal. However, data collected during an IRP investigation of FT-06 indicates groundwater contaminated with TCE has migrated off-base (highest concentrations of 205 ppb). The are no immediate off-base receptors at this time, however, a surface pond is located downgradient which may be impacted.

Additional Information Requirements: Additional information may be necessary to determine if TCE contamination is a result as a release of this unit.

Recommendations: Recommended a RCRA Interim Action be implemented to minimize/reduce the off-base migration of TCE contaminated groundwater in association with MAFB 160. In addition, conduct soil sampling to locate the potential source of contamination as part of the RCRA Interim Action.

MAFB 108: OLD BASE LAKE HARDFILL AREA

The Old Base Lake Hardfill Area is an approximately 16 acre area west and northwest of Hardfill Area 2 (MAFB 105). This area was dredged in 1967-68 and segregated from the creek that ran along its southeastern edge to create an approximately 5 foot deep lake. The lake was drained between 1985 and 1987 and was filled in with concrete, asphalt, dirt, brush and other construction debris. Reconstruction at the base following the April 1991 tornado resulted in the generation of a large amount of construction debris at the base, some of which was likely disposed of at MAFB 108. The entire area was filled and regraded during 1992.

Unit Characteristics: This unit is comprised of approximately 16 acres of relatively flat terrain. The depth to which debris was buried is unknown. The area was observed to be covered with vegetation during the December 1994 VSI.

Waste Characteristics: Construction debris, concrete, asphalt, dirt, and brush were disposed of in this unit.

Pollutant Migration Pathways: The materials placed in this unit are essentially inert and not likely to release any contaminant constituents; therefore, the potential for groundwater, surface water, air, soils, or subsurface gas to be pollutant migration pathways is negligible.

Evidence of Release: The disposal of construction and other debris in this unit constitutes a release of waste to the environment (soil). There is no evidence of off-base release of contaminants to the environment from this unit.

Release Potential: The materials placed in this unit are essentially inert and thus the release potential from this unit is minimal.

Figure 2
Solid Waste Management Unit
Data Collection Form

Unit name: HARDFILL ~~SITE~~ Area NO. 4

Unit location:
SOUTH ISOUTH EAST OF DRMO STORAGE AREA

Source: VS1/AP

Unit type and size (horizontal and vertical extent):

2 acres - see map for extent

Source: VS1/AP

Past and present operating practices:

Oct. 1983, hardfill not visible; only a grassy field mowed regularly is visible.
Source: Aerial Photographs, Mcconnel AFB, Eng. Dept.

Used from 1955-65 for disposal of scrapped aircraft wreckage.
Source: IRP Phase I report, August 1985, ES.

Source:

Unit name: Hardfill Area 4

Wastes disposed of in unit (include all known waste characteristics and quantities):

disposal of scrapped aircraft wreckage

Source: IRP Phase I, Es 1985

Evidences of releases from unit (visual and recorded):

disposal of wreckage constitutes release, no evidence of off-base releases

Source:

Release potential:

Minimal

Source:

Exposure potential:

Minimal

Source:

Unit name: Hardfill Area 4

Pollutant migration pathways:

Surface Water: negligible

Groundwater: negligible

Soil: negligible

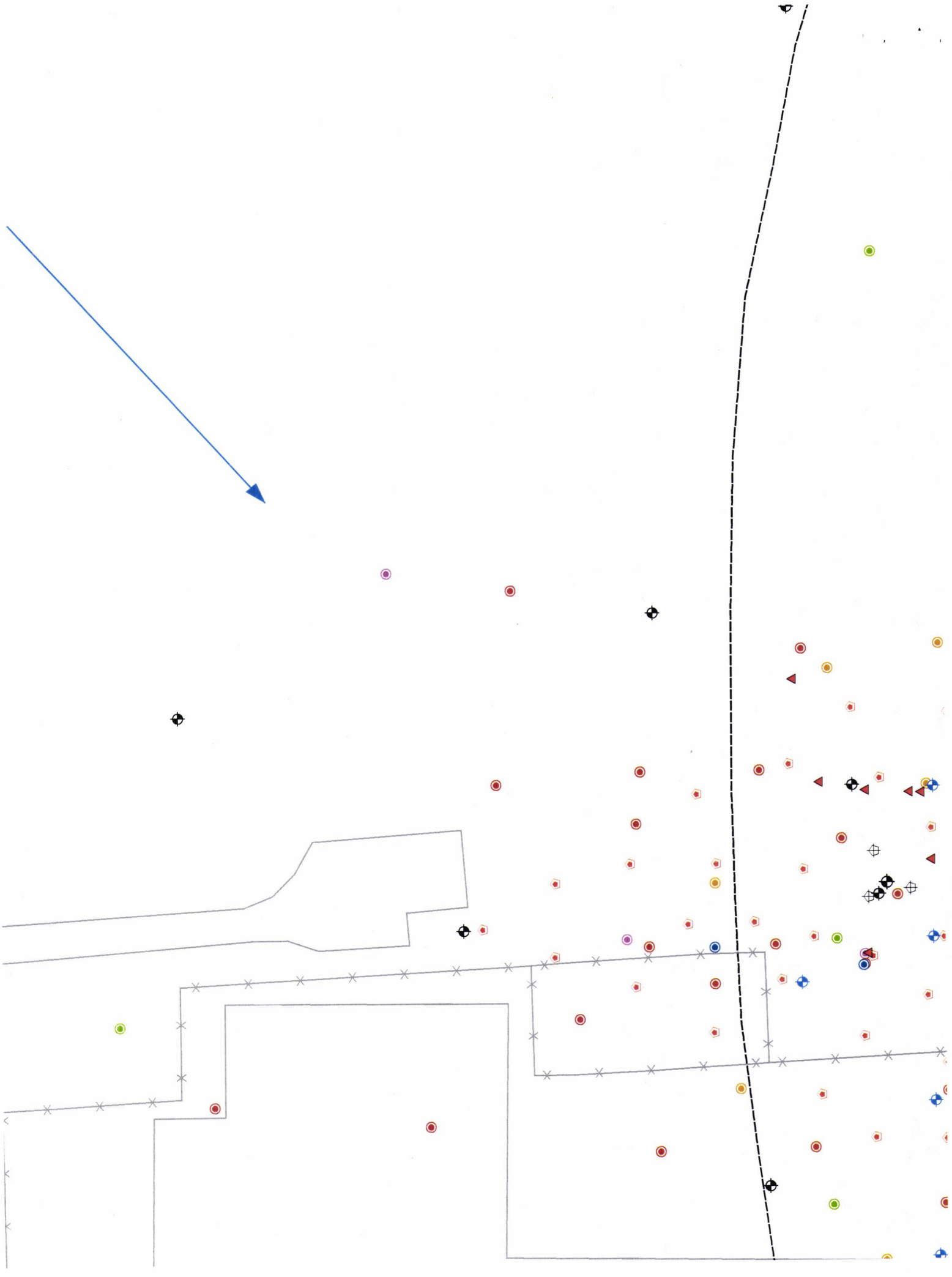
Air: negligible

Subsurface gas: negligible

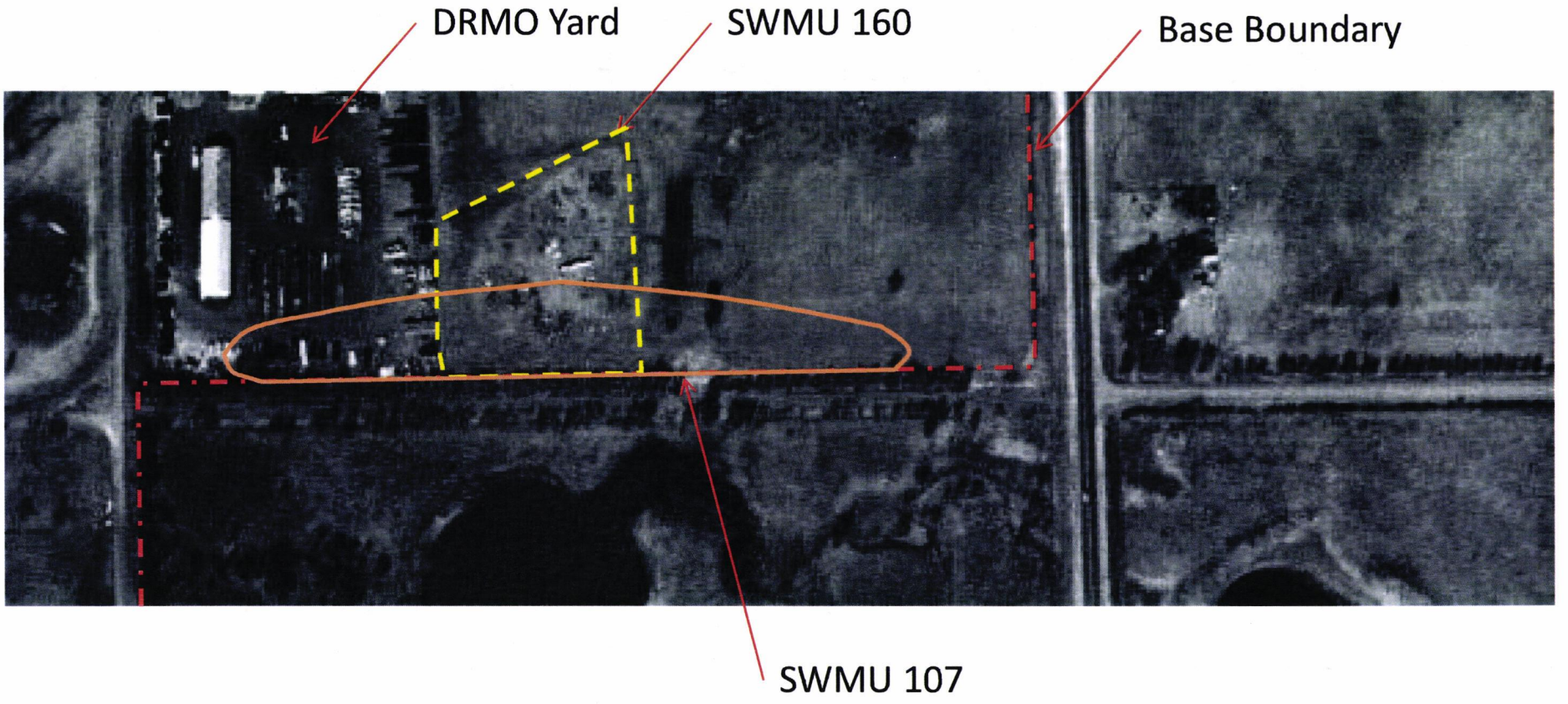
Source:

Additional remarks:

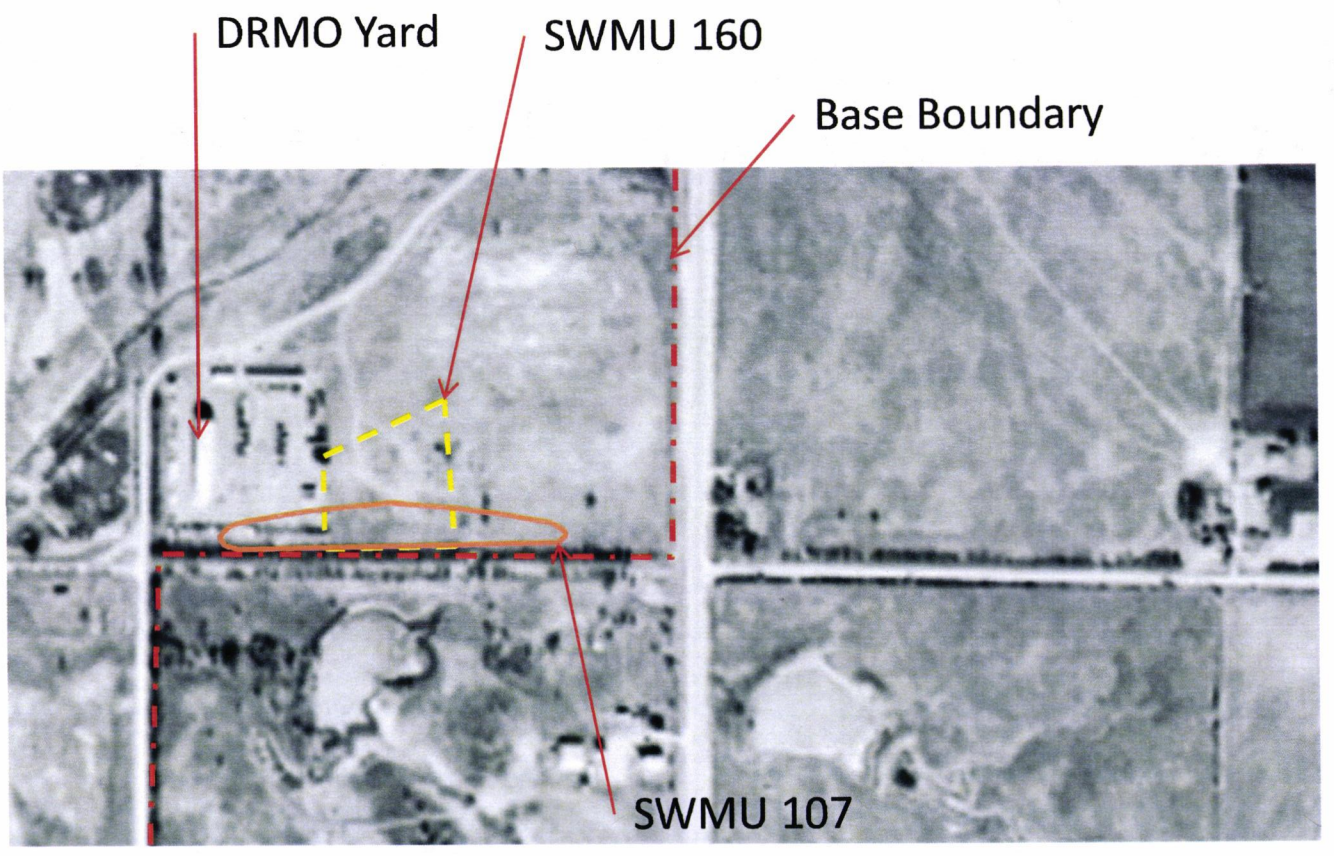
Source:



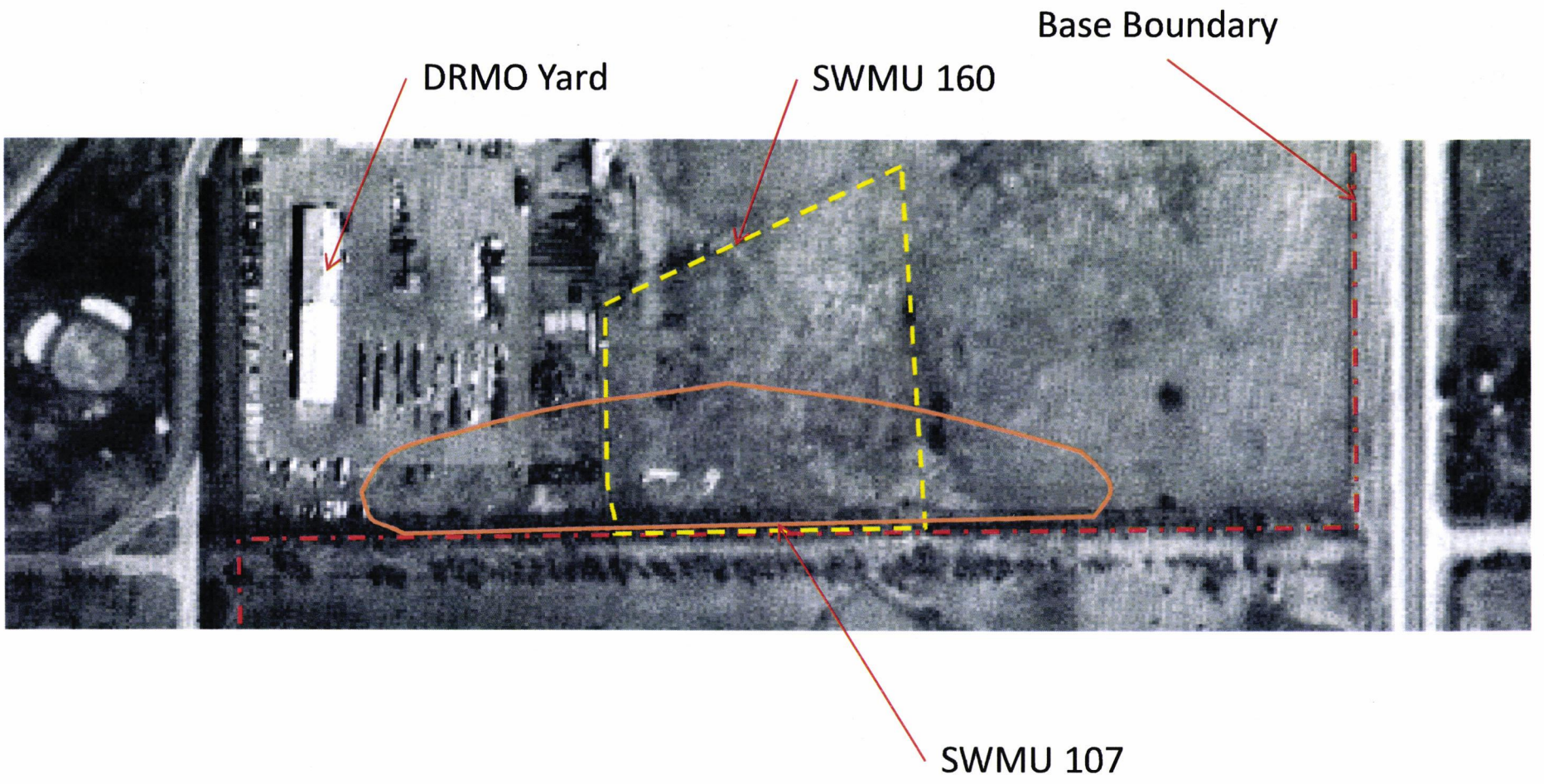
1968 Aerial



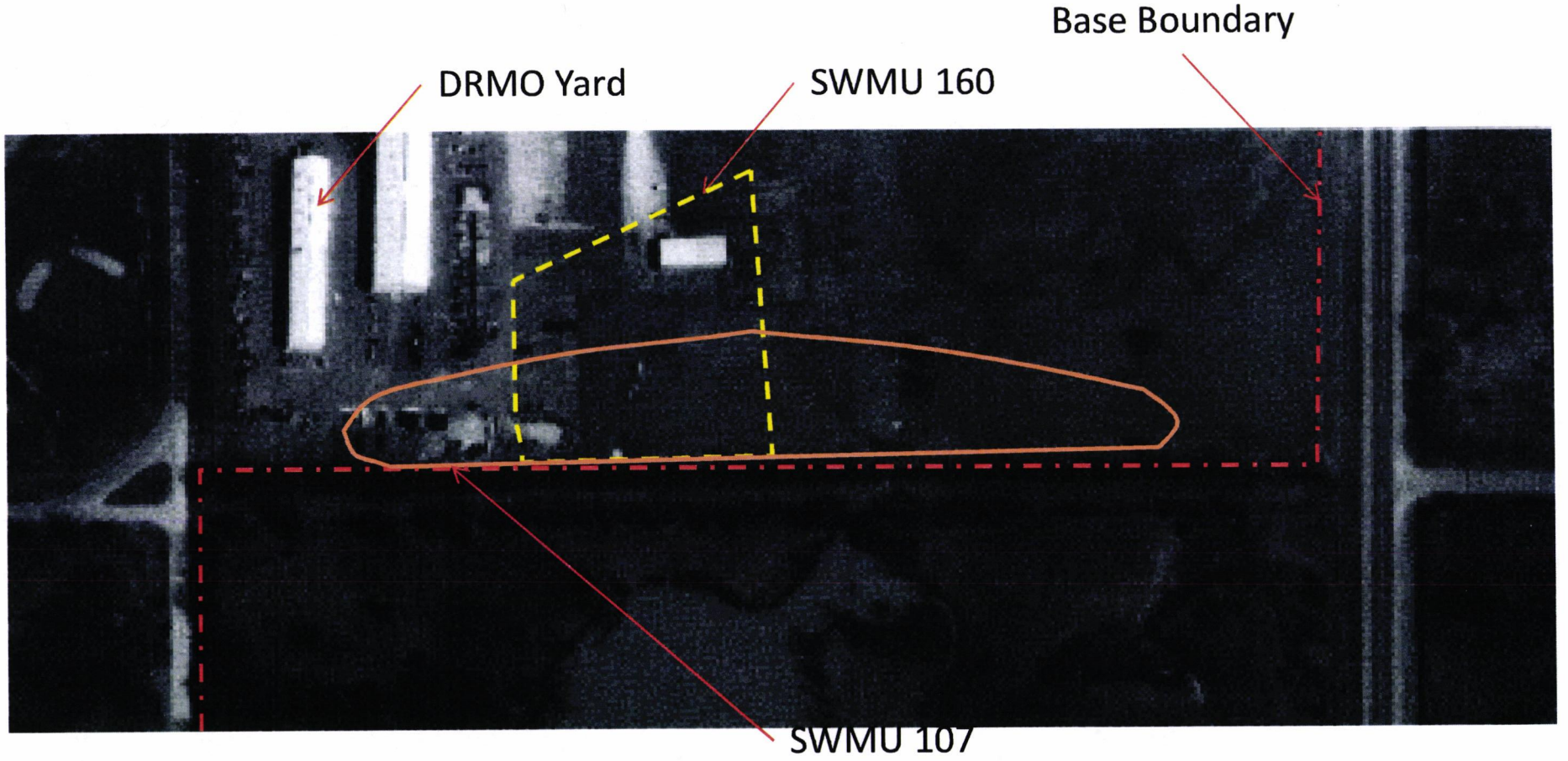
1970 Aerial



1974 Aerial



1983 Aerial



Upcoming Fieldwork
Summer/Fall 2017
McConnell AFB PBR

FT006: Excavation/backfill (final)

End of June/Beginning of July

ZZ052: Re-sample soil and groundwater (email, in-preparation)

Mid July (w/ SS056, RW629, and SS548)

SS056 (SWMU 158): Sample soil and groundwater for PCBs (draft)

Mid July (w/ ZZ052, RW629, and SS548)

RW629 (SWMU 177): Confirmation soil sampling for BaP (final)

Mid July (w/ ZZ052, SS056, and SS548)

SS548 (Building 971): Additional investigation of shallow groundwater (draft)

Mid July (w/ ZZ052, SS056, and RW629)

FT006 and SS003: Monitoring well installation and sampling

Mid to Late July (w/ OW045)

OW045 (SWMU 130): Install and sample two monitoring wells (draft)

Mid to Late July (w/ FT006 and SS003)

Mitigation Injections at 7 sites (FT006, FT007, OT547, SS001, TU036, LF034, and ST017) (pre-draft)

August through October, followed by performance monitoring

September annual sampling event at 9 sites (FT006, FT007, ID636, LF011, LF034, SS001, SS003, SS014, and ST017) and performance monitoring at 6 sites (OT547, OW026, OW041, OW633, SS044, and TU036) (final)

September (w/ 1,4-Dioxane sampling)

1,4-Dioxane sampling at 15 sites (FT006, FT007, ID636, LF011, LF033, LF034, OT547, OW041, OW545, OW633, SS001, SS003, SS014, SS544, TU036) (draft)

September (w/ September sampling event)

TU046 (SWMU 203): Direct push soil and groundwater sampling (draft)

Early September (w/ OW579)

Upcoming Fieldwork
Summer/Fall 2017
McConnell AFB PBR

OW579 (SWMU188): Direct push groundwater sampling (draft)

Early September (w/ TU046)

DP013: Excavations for LLRW drums (in preparation)

Early October

SS056: Excavation/backfill (draft)

Mid October

SS003: Vapor intrusion sampling (in preparation)

Mid October

SS032 (SWMU 109): DP groundwater sampling for filtered versus unfiltered samples (emailed 29JUN17)

Early November (airfield waiver)

emedy Description	Treatment Summary				Remedy Proposal Status
	Treatment Event	Treatment Dates	Injection Material	Treatment Effectiveness	
ed VOCs in avation of toluene- formance & Annual utional Controls	ISCR Pilot Study Injection	6/28/14 - 7/8/14	ZVI	Minor concentrations of TCE remain and are stable; cDCE remain in core	Remedy proposal tech memo submitted
	ISCR Full Scale Injection	11/6/14 - 12/13/14	ZVI		
	ISCR Mitigation Injection 1	2/28/16 - 3/9/16	ZVI		
	Soil Excavation	TBD	N/A		
	ISCR Mitigation Injection 2	TBD	ZVI/organic substrate		
		TBD	organic substrate		
ed VOCs in formance & Annual utional Controls	ISCR Full Scale Injection	12/5/14 - 12/20/14	ZVI	Minor concentrations of VC remain	Remedy proposal tech memo submitted
ed VOCs in formance & Annual utional Controls	ISCR Full Scale Injection	1/14/15 - 1/17/15	ZVI	TCE concentrations stable or declining	Remedy proposal tech memo submitted
rols, Landfill Cap	N/A	N/A	N/A	N/A	Remedy proposal tech memo submitted
rols, Landfill Cap	N/A	N/A	N/A	N/A	Remedy proposal tech memo submitted
rols, Landfill Cap	N/A	N/A	N/A	N/A	Remedy proposal tech memo submitted
rols, Landfill Cap	N/A	N/A	N/A	N/A	Remedy proposal tech memo submitted
rols, Landfill Cap	N/A	N/A	N/A	N/A	Remedy proposal tech memo submitted
ed VOCs in formance & Annual utional Controls	ISCR Pilot Study Injection	7/9/14 - 7/10/14	ZVI	Minor concentrations of TCE remain and are declining; cDCE and VC remain in core	Remedy proposal tech memo submitted
	ISCR Full Scale Injection	10/2/14 - 11/20/14	ZVI		
	ISCR Mitigation Injection 1	TBD	ZVI		
ed VOCs in O of fuel-related vater, Performance & ıg, Institutional	ISCR Pilot Study Injection	6/25/14 - 6/26/14	ZVI	TCE concentrations decreased, but stable; cDCE and VC remain in core	Submittal of remedy proposal tech memo dependent on results of upcoming mitigatio injection
	ISCR Full Scale Injection	12/11/14 - 1/11/15	ZVI		
	ISCR Mitigation Injection 1	3/2/16 - 3/14/16	ZVI		
	ISCR Mitigation Injection 2	TBD	ZVI		
	ISCO Full Scale Injection	6/18/14 - 6/22/14	Sodium Persulfate	Minor concentrations of fuel (benzene) remain	
	ISCO Full Scale Injection	10/9/14 - 10/31/14	Sodium Persulfate		
	ISCO Mitigation Injection 1	7/26/15 - 7/31/15	Sodium Persulfate		
		7/25/15 - 7/29/15	Sodium Persulfate		
	ISCO Mitigation Injection 2	9/24/15 - 10/2/15	Sodium Persulfate		
	ISCO Mitigation Injection 3	9/23/16 - 10/1/16	Sodium Persulfate		
	ISCO Mitigation Injection 4	TBD	Calcium Peroxide		
		TBD	Potassium Persulfate		
ted VOCs and TPHs in formance & Annual utional Controls	ISCO Pilot Study Injection	7/12/14 - 7/14/14	Sodium Persulfate	Minor concentrations of TPHs remain	Submittal of remedy proposal tech memo dependent on results of upcoming mitigatio injection
	ISCO Full Scale Injection	11/9/14 - 11/24/14	Sodium Persulfate		
	ISCO Mitigation Injection 1	7/31/15 - 8/7/15	Sodium Persulfate		
	ISCO Mitigation Injection 2	4/18/16 - 4/29/16	Sodium Persulfate		
	ISCO Mitigation Injection 3	TBD	Sodium Persulfate		

emedy Description	Treatment Summary				Remedy Proposal Status
	Treatment Event	Treatment Dates	Injection Material	Treatment Effectiveness	
ted VOCs and TPHs in formance & Annual utional Controls	ISCO Full Scale Injection	10/28/15 - 11/6/15	Sodium Persulfate	Minor concentrations of TPHs remain	Submittal of remedy proposal tech memo dependent on results of upcoming mitigatio injection
	ISCO Mitigation Injection 1	9/17/16 - 9/21/16	Sodium Persulfate		
	ISCO Mitigation Injection 2	TBD	Sodium Persulfate		
ted VOCs and TPHs in formance & Annual utional Controls	ISCO Full Scale Injection	11/11/15 - 11/15/15	Sodium Persulfate	TPHs below KDHE RSKs	Submittal of remedy proposal tech memo pending further evalaution of increasing trend in TPH-MRH
		1/16/16 - 1/21/16			
ed VOCs in O of fuel-related in groundwater, nnual Monitoring, rols	ISCR Full Scale Injection (North)	10/4/15 - 11/22/15	ZVI	TCE concentrations decreasing or stable	
		3/17/16 - 3/21/16	ZVI		
	ISCR Mitigation Injection 1 (North)	TBD	ZVI		
	ISCR Full Scale Injection (South)	9/16/16 - 11/19/16	ZVI		
		3/3/17 - 3/5/17	ZVI		
	ISCO Full Scale Injection	10/4/15 - 10/10/15	Sodium Persulfate	TPHs below KDHE RSKs	
ed VOCs in O of fuel-related in groundwater, nnual Monitoring, rols	ISCR Full Scale Injection	10/23/15 - 5/5/16	ZVI	TCE, cDCE, and VC concentrations remain in core	
	ISCO Full Scale Injection	1/8/16 - 2/22/16	Sodium Persulfate	TPHs below KDHE RSKs	
ted VOCs and TPHs in formance & Annual utional Controls	ISCO Full Scale Injection	10/12/15 - 4/15/16	Sodium Persulfate	Fuels remain in core	
	ISCO Mitigation Injection 1	10/3/16 - 11/5/16	Sodium Persulfate		
	ISCO Mitigation Injection 2	TBD	Potassium Persulfate		
ed and fuel-related in groundwater, nnual Monitoring, rols	ISCO Full Scale Injection	11/12/16 - 12/21/16	Sodium Persulfate	TBD	
ea chlorinated VOCs, nnual Monitoring, rols	ISCR Full Scale Injection	11/19/16 - 3/14/17	ZVI	TBD	
ea chlorinated VOCs Performance & Annual utional Controls	ISCR Full Scale Injection	11/30/16 - 2/5/17	ZVI	TBD	
ed and fuel-related in groundwater, nnual Monitoring, rols	ISCO Full Scale Injection	1/8/17 - 2/13/17	Sodium Persulfate	TBD	

TCE = trichloroethene
TPH = total petroleum hydrocarbons
TPH-MRH = total petroleum hydrocarbons-mid-range hydrocarbons
VC = vinyl chloride

Frequency	Maximum	KDHE RSK		USEPA RSL		Background	SWMU 177-SB01 SWMU177-SB01-08 January 26, 2012 8 feet bgs			SWMU 177-SB02 SWMU177-SB02-06 January 25, 2012 6 feet bgs			SWMU 177-SB03 SWMU177-SB03 January 26, 2012 10 feet bgs			SWMU177-SB03 SWMU177-FD1 January 26, 2012 10 feet bgs			S
		Residential Soil	Residential Soil to Groundwater Pathway	Residential Soil	Protection to Groundwater Risk-Based SSL[1]	95% UTL	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual	Res
1 / 6	2.2 J	30,500	349	3,800	0.54	--	<	5.0	U	<	3.5	U	2.2	4.1	J	<	4.0	U	<
1 / 6	22.8 J	3,420,000	255,000	360,000	550	--	22.8	200	J	<	810	U	<	200	U	<	200	U	<
1 / 6	21.2 J	10,900	7,890	1,100	11	--	21.2	200	J	<	810	U	<	200	U	<	200	U	<
1 / 6	32 J	1,090	23,500	110*	29	--	32	200	J	<	810	U	<	200	U	<	200	U	<
1 / 6	26.1 J	10,900	19,200	1,100	300	--	26.1	200	J	<	810	U	<	200	U	<	200	U	<
1 / 6	21 J	--	--	--	--	--	21	200	J	<	810	U	<	200	U	<	200	U	<
1 / 6	23.7 J	109,000	190,000	11,000	2,900	--	23.7	200	J	<	810	U	<	200	U	<	200	U	<
1 / 6	21.5 J	1,090,000	805,000	110,000	9,000	--	21.5	200	J	<	810	U	<	200	U	<	200	U	<
1 / 6	24.1 J	2,440,000	2,830,000	240,000	8,900	--	24.1	200	J	<	810	U	<	200	U	<	200	U	<
1 / 6	23.2 J	10,900	45,500	1,100	980	--	23.2	200	J	<	810	U	<	200	U	<	200	U	<
1 / 6	31.6 J	--	--	--	--	--	31.6	200	J	<	810	U	<	200	U	<	200	U	<
1 / 6	23.1 J	1,830,000	2,190,000	180,000	1,300	--	23.1	200	J	<	810	U	<	200	U	<	200	U	<
6 / 6	*23,800*	--	--	7,700	3,000	23,200	13,800	37		21,400	48		*23,800*	30		21,500	32		18,8
6 / 6	5.0	18.9	--	0.68	0.0015	13	2.6	1.9		4.2	0.60		4.6	1.5		5.0	1.6		3.
6 / 6	301	15,300	--	1,500	16	769	145	37		168	48		301	30		243	32		15
6 / 6	1.0	155	--	16	1.9	1.6	0.7	0.93	J	0.92	1.2	J	1.0	0.76		0.95	0.80		0.8
3 / 6	0.22	39	--	7.1	0.069	0.7	<	0.74	U	0.21	0.24	J	<	0.61	U	<	0.64	U	0.1
6 / 6	7,830	--	--	--	--	200,000	5,260	930		4,600	1,200		4,150	760		3,750	800		7,8
6 / 6	21.1	33.6	--	12,000	180,000	25.8	12.3	1.9		13.5	0.60		21.1	1.5		18.7	1.6		15
6 / 6	8.2	23.4	--	2.3	0.027	15.9	4.3	9.3	J	6.3	3.0		8.2	7.6		8.1	8.0		5.
6 / 6	11.1	3,130	--	310	2.8	16.3	8.6	4.6		8.7	1.5		11.1	3.8		10.8	4.0		9.
6 / 6	17,200	--	--	5,500	35	23,600	10,200	56		16,800	72		17,200	46		15,600	48		12,
6 / 6	15.2	400	--	400	14	23.2	13.1	0.93		12.7	1.2		13.7	0.76		14.1	0.80		12
6 / 6	3,870	--	--	--	--	14,900	2,240	930		2,950	1,200		3,870	760		3,290	800		3,1
6 / 6	241	9,300	--	180	2.8	788	137	2.8		241	0.91		218	2.30		219	2.4		18
6 / 6	0.012 J	2	--	1.1	0.0033	0.043	0.011	0.090	J	0.010	0.10	J	0.011	0.091	J	0.011	0.10	J	0.0
6 / 6	16.4	1,540	--	150	2.6	27.2	10.5	7.4		11.8	2.4		16.4	6.1		16.3	6.4		14
6 / 6	2,660	--	--	--	--	6,500	1,580	1,900	J	2,070	2,400	J	2,660	1,500		2,510	1,600		2,1
2 / 6	0.64 J	391	--	39	0.052	3.8	<	3.7	U	<	1.2	U	0.64	3.0	J	0.64	3.2	J	<
4 / 6	244 J	--	--	--	--	915.9	<	1,900	U	<	2,400	U	175	1,500	F	244	1,600	J	15
1 / 6	*0.45 J*	--	--	0.078	0.0014	--	<	1.9	U	<	0.6	U	<	1.5	U	*0.45*	1.6	J	<
6 / 6	35.4	--	--	39	8.6	41.3	25.2	9.3		28.1	3.0		34.8	7.6		35.4	8.0		27
6 / 6	40.8	23,500	--	2,300	37	59.3	30.1	3.7		27.7	1.2		39.4	3.0		40.8	3.2		31

ist.

g level.
ng level.

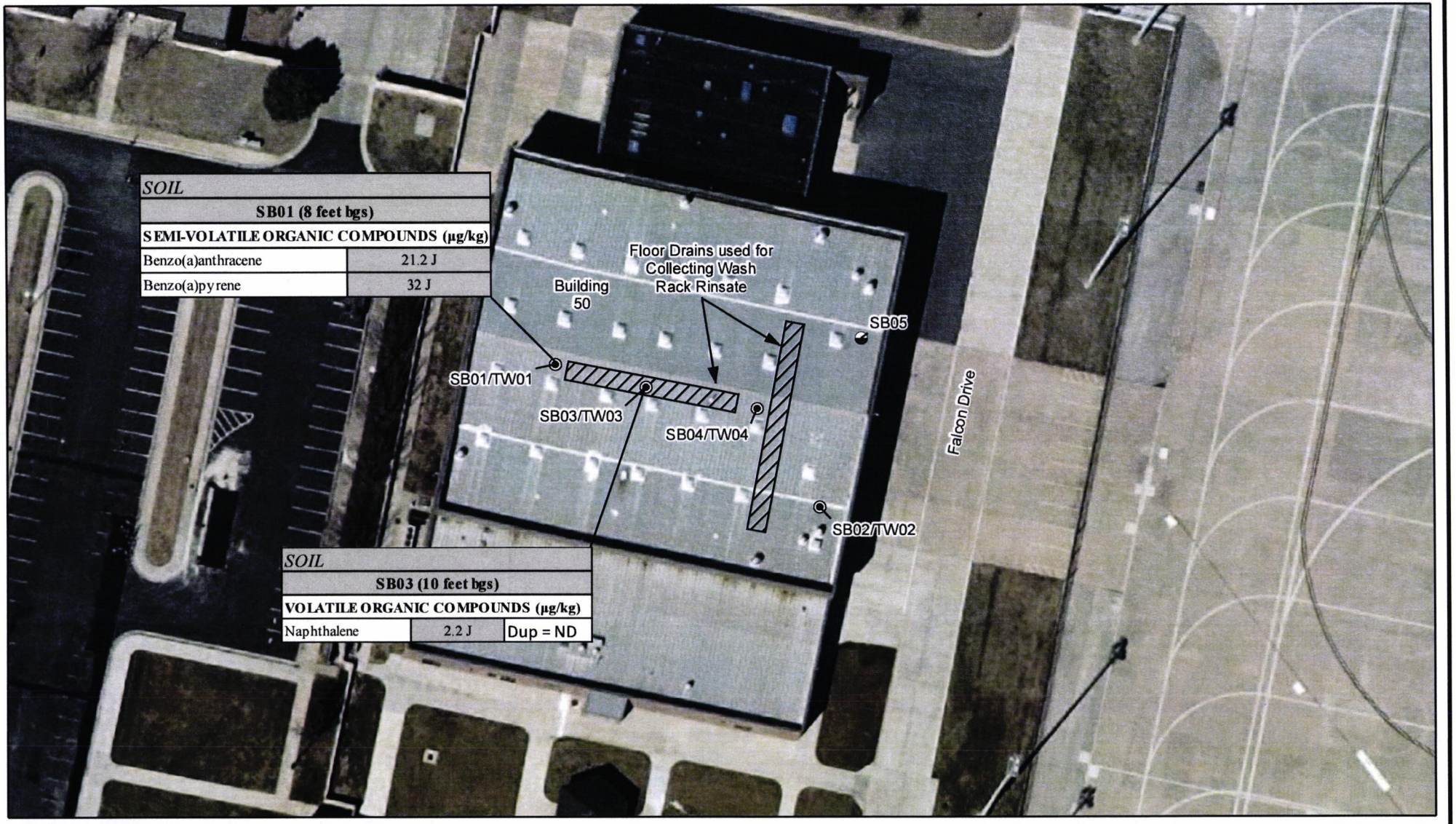
USEPA screening levels are from the most current RSL Summary Table (TR=1E-6, HQ=0.1) (June 2017).

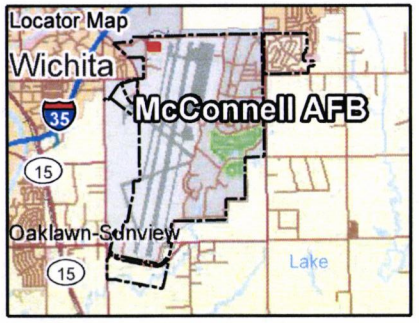
Acronyms and Abbreviations:

< = Sample result is less than the reporting limit.

bgs = below ground surface
ID = identification
HQ = hazard quotient
J = Estimated
KDHE = Kansas Department of Health and Environment

RL = reporting
RSK = Risk-B
RSL = Region
TR = target ris
SSL = soil scr





Legend

- Previous Soil and Groundwater Sample Location from 2012 RFA
- Previous Soil Sample Location

bgs = below ground surface
Dup = Field duplicate sample
ND = Nondetect
µg/kg = microgram per kilogram
Indicates exceedance of USEPA RSL screening level
Bold Indicates exceedance of KDHE RSK screening level
J = Estimated

Note:
Metals concentrations exceeding screening criteria not shown. Refer to **Table I-1** for metals data.

60 30 0 60
N Feet

Previous Samples Exceeding Screening Criteria
RW629 RFA Addendum WP
McConnell Air Force Base,
Wichita, Kansas

Drawn By:	Date:	Project No:	Figure I-4
DPG	4/21/2017	60418270	
Checked By: ATO	Revision: 0		

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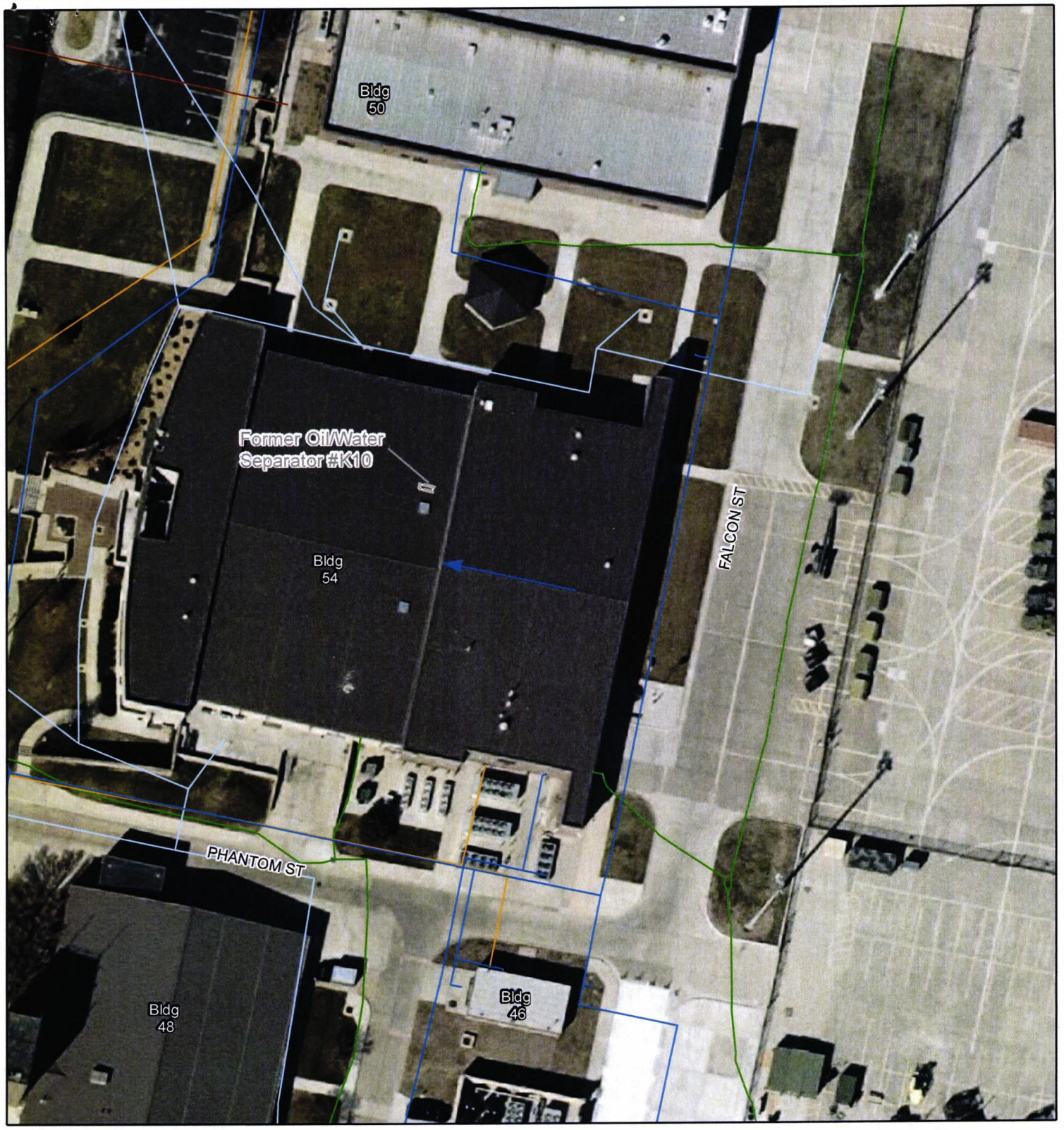
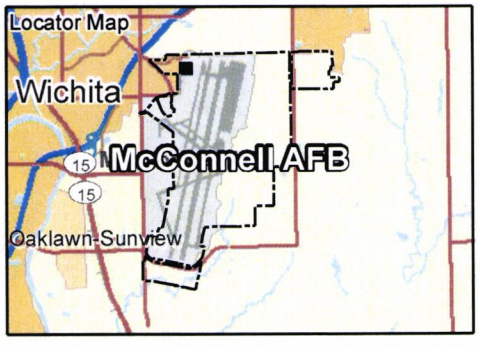




Legend

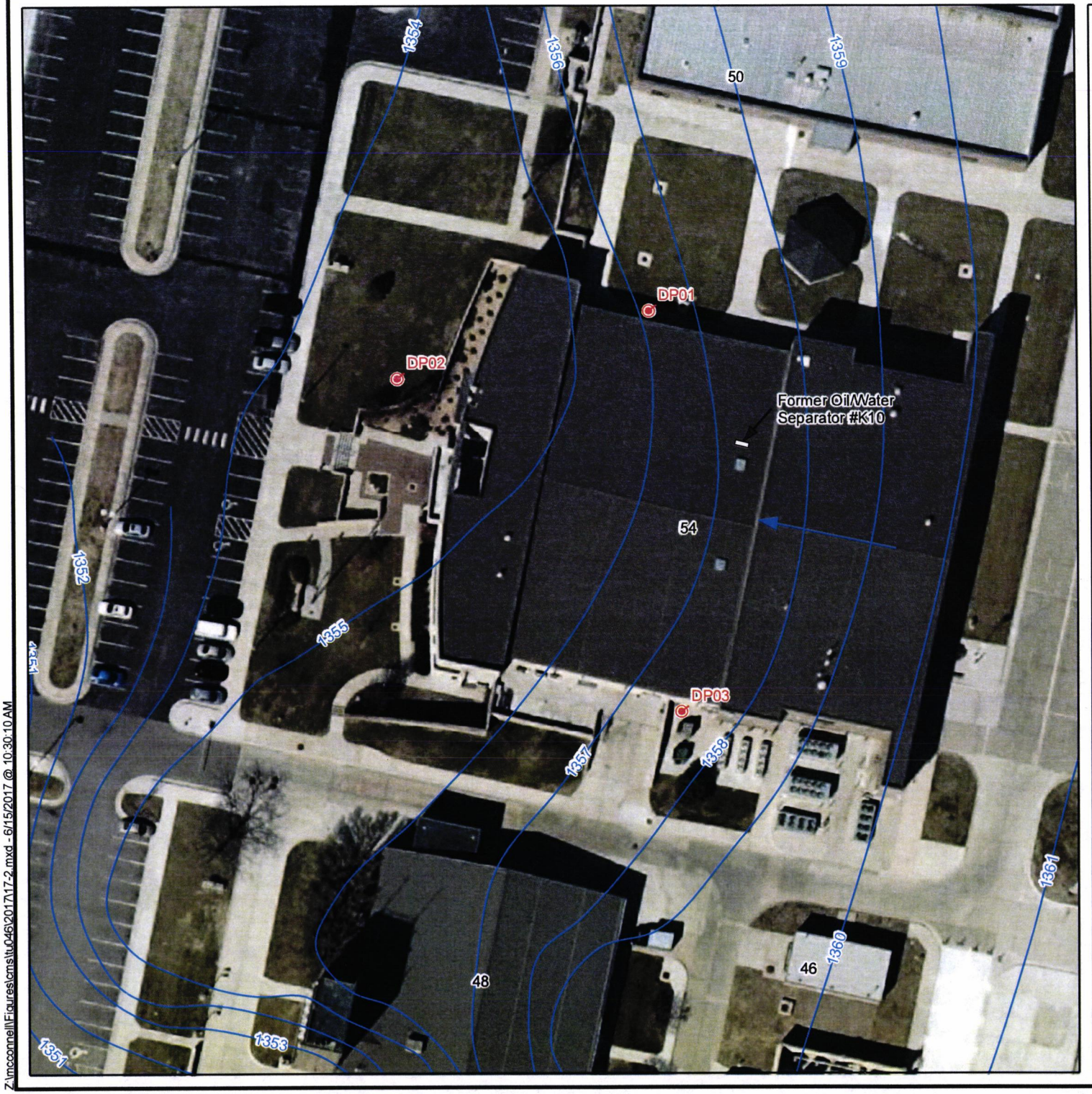
- Inferred Groundwater Flow Direction
- Wastewater Line
- Water Line
- Storm Sewer Line
- Natural Gas Line
- Communication Line

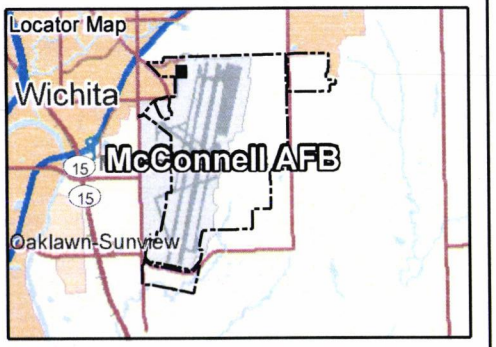
Notes:
Based on water levels from nearby monitoring wells, groundwater flow direction appears to be to the west - northwest.

N 60 30 0 60 Feet

OW579 Site Layout Map
TU046 and OW579 RFA WP
UFP-QAPP Addendum 9
McConnell Air Force Base,
Wichita, Kansas

Drawn By:	Date:	Project No:	Figure I-4
DPG	6/15/2017	60418270	
Checked By:	Revision:		
RMC	1		





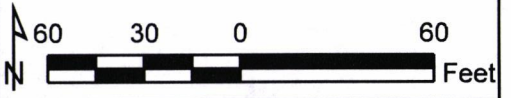
Legend

- Planned Direct Push Location
- Inferred Groundwater Flow Direction
- Groundwater Elevation Contour

1355 = groundwater elevation
(feet above mean sea level - August 2016)

Notes:

1. Based on water levels from nearby monitoring wells, groundwater flow direction appears to be to the west-northwest.
2. Sample locations are based on the location of the former oil/water separator #K10 and may be adjusted based on field observations and accessibility.
3. Sample types are described in Worksheet 18.9.



OW579 Planned Sample Location Map
TU046 and OW579 RFA WP
UFP-QAPP Addendum 9
McConnell Air Force Base,
Wichita, Kansas

Drawn By:	Date:	Project No:	Figure 17-2
DPG	6/15/2017	60418270	
Checked By: RMC	Revision: 1		

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